MC0159

Health Building Note 51

Accommodation at the main entrance of a District General Hospital

NHS Estates
An Executive Agency of the Department of Health

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An Executive Agency of the Department of Health

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About this publication

The Health Building Note series is intended to give advice on the briefing and design implications of Departmental policy.

These Notes are prepared in consultation with representatives of the National Health Service and appropriate professional bodies.

Health Building Notes are aimed at multi-disciplinary teams engaged in:

- Designing new buildings
- Adapting or extending existing buildings

Throughout the series, particular attention is paid to the relationship between the design of a given department and its subsequent management. Since this equation will have important implications for capital and running costs, alternative solutions are sometimes proposed. The intention is to give the reader informed guidance on which to base design decisions.

Health Building Note 51

HBN51 focuses on accommodation requirements at the main entrance of a District General Hospital.

The main entrance is the first part of the hospital seen by patients and their families and forms their initial impressions of the hospital accommodation, the hospital organisation and the quality of service. This Note therefore recommends that designers should aim to create an aesthetically attractive and interesting environment which inspires confidence in the service being offered.

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1.0 Scope of Health Building Note 51

Introduction

1.1 Health Building Note (HBN) 51 is a guide to the planning and design of accommodation which should be located close to the main entrance of a District General Hospital. It replaces that part of HBN 18 – 'Administrative department' (1963, reprinted with amendments in 1966 and, without further amendments, in 1970), which describes "Rooms related to the main entrance", except the telephone exchange and apparatus room and telephonists' rest room, which are now the subject of HBN 48 – 'Telephone services', and the head porter's room, porters' room and postal sorting room, which are included in the Supplement to this Note, 'Miscellaneous spaces in a District General Hospital' (HBN 51 Supplement 1).

1.2 The main changes in the NHS, significant for this Note, which have occurred since HBN 18 was first published, are:

a. the increase in the number of people who attend hospitals;

b. the increasing need for security;

c. and, more recently, the emphasis on making opportunities for income generation.

Exclusions

1.3 The entrances to the departments described in the following Notes must be designed specially:

a. 'Mortuary and post-mortem room' (HBN 20);

b. 'Accident and emergency department' (HBN 22);

c. 'Accommodation for people with acute mental illness' (HBN 35);

d. 'Hospital accommodation for elderly people' (HBN 37: Day Hospital);

e. 'Accommodation for education and training' (HBN 42).

1.4 Entrances intended specifically for use by staff and for materials handling purposes, as described in the following Notes, are excluded:

a. 'The whole hospital' (HBN 2 – in preparation);

b. 'Catering department' (HBN 10);

c. 'Sterilizing and disinfecting unit' (HBN 13 – in preparation);

d. 'Laundry' (HBN 25 – in preparation);

e. 'Hospital receipt and distribution centre' (HBN 49 – in preparation).

1.5 Normally, access to departments other than those referred to above, such as out-patients department and rehabilitation department, is through the main entrance. However, local circumstances may require that such departments be provided with their own direct external entrance. Departmental entrances are excluded from this Note and described in the HBN 51 Supplement 1 – 'Miscellaneous spaces in a District General Hospital'.

Works Guidance Index

1.6 Whilst this Note provides guidance that is current at the time of publication, it must be borne in mind that there are wider considerations associated with high risk infectious diseases, fire, energy conservation, etc., covered by other published guidance which must also be taken into account. Additionally, some aspects of the guidance in this Note may from time-to-time be amended or qualified. Project teams should first check the current edition of the Works Guidance Index. Because the Index is published by the Department in May each year, and updated only in September and January, project teams should ensure that they investigate the possibility of changes not included in the latest published Index.

Cost allowances

1.7 The cost allowances associated with this Note are promulgated in an Annex to the Health Notice (HN(90)11) issued with the Advance Copy of the Note.

Capricode

1.8 Capricode is the mandatory procedural framework governing the inception, planning, processing and control of individual health building schemes. The aim is to promote a consistent and streamlined approach to capital development that achieves best use of resources through the selection and construction of relevant and cost-effective schemes that open on time and within budget. It identifies the main activities and provides a framework for

delegation with effective management and the proper accounting for expenditure and performance. (See 'Capricode Health Building Procedures' issued with HN(86)32 in October 1986 - in Wales, WHC(86)62).

Equipment

1.9 Equipment is categorised into four groups:

Group 1: items (including engineering terminal outlets) supplied and fixed within the terms of the building contract;

Group 2: items which have space and/or building construction and/or engineering service requirements and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract;

Group 3: as Group 2 but supplied and fixed (or placed in position) under arrangements separate from the building contract;

Group 4: items supplied under arrangements separate from the building contract, possibly with storage implications but otherwise having no effect on space or engineering service requirements.

1.10 Group 1 items are provided for in the cost allowance associated with this Note. The Equipment Cost Allowance Guide (ECAG) specifies a sum of money for Groups 2, 3 and 4.

2.0 General service considerations

Introduction

2.1 The main entrance is defined as the normal point of access to a hospital for the majority of patients, visitors and staff. This Note describes accommodation which will be suitable for most District General Hospitals and includes spaces and facilities, such as the enquiry and information counter, waiting areas, refreshments area and sanitary facilities.

2.2 Other Health Building Notes (HBN) describing spaces which may be located at the main entrance, include:

a. HBN 29 – 'Accommodation for pharmaceutical services';

b. HBN 47 – 'Health records department';

c. HBN 48 – 'Telephone services';

d. HBN 51 Supplement 1 – 'Miscellaneous spaces in a District General Hospital'.

Pedestrian traffic load

2.3 The number of people passing through and making use of facilities at the main entrance is determined mainly by:

a. the number of beds in the hospital - influencing the number of in-patients, visitors and staff;

b. the number of patient attendances to departments with access through the main entrance;

c. the provision and location of other entrances.

Visiting times affect the flow of pedestrians through the main entrance: open visiting hours give rise to a fairly even flow, but fixed visiting hours are associated with large periodic fluctuations inflow. Fluctuations superimposed on a steady flow may occur if some wards have fixed, while others have open, visiting.

Security

2.4 The security of a hospital is increased by restricting the number of external entrances to a minimum (see HBN 2 – 'The whole hospital'– in preparation).

2.5 Assaults on hospital staff and theft of NHS property are recognised problems. The project team should discuss security with the officer in charge of the local police crime prevention department and the hospital or district security officer or adviser at an early stage in the design of the building. Fire and security officers should be consulted concurrently because the demands of security and fire safety may sometimes conflict. The attention of planners is drawn to Circular HN(84)26, dated December 1984 (in Wales, Circular WHN(85)1), about security, and the NHS Security Manual issued with the Circular.

2.6 Where violent incidents are likely, employers have a duty under Section 2 of the Health and Safety at Work (HSW) Act to identify the nature and extent of the risk and to devise measures which should reduce it, and provide the safest possible workplace and system of work. Such measures should reflect the guidance given in the Health Services Advisory Committee report, 'Violence to Staff in the Health Services', 1987, which advises consideration of such matters as:

a. the design of reception points and waiting areas;

b. access to payphones;

c. ease of contact with colleagues;

d. the use of personal alarms and the location of panic buttons.

Income generation opportunities

General

2.7 Health authorities should consider carefully the income generation opportunities presented by the main entrance. Shops and vending machines are popular means of income generation, but there are other possibilities, such as the hire of space for display panels, and for market stalls and display barrows.

2.8 The success of a business venture depends mainly on the pedestrian traffic load of the main entrance (see paragraph 2.3 above) but is also influenced by the location of the hospital and the size of trading areas offered.

Voluntary organisations

2.9 Voluntary organisations have a long tradition of service in hospitals, including the donation of profits from fund-raising activities to the NHS. Health authorities continue to esteem this contribution, which cannot be measured simply in financial terms. The special contribution which non-commercial organisations make to the hospital, and their relations with the community it serves, should be a prime consideration when allocating space to competing interests.

Commercial activities

2.10 The scope and extent of income generation spaces, particularly for commercial profit-making purposes, is a matter for local decision and is not dealt with in this Note.

Commercial organisations likely to be interested in space at the main entrance should be approached as soon as possible and involved in planning at an early stage.

a

b

Royal Bournemouth General Hospital:

a View of the main entrance

b Main waiting area and concourse

Ealing Hospital, Middlesex: Reception, concourse and flower shop

Addenbrooke's Hospital, Cambridge: Refreshment area and shop

a

b

St. Mary's Hospital, Newport, Isle of Wight:
a Main entrance
b Main waiting area

a

b

Bradwell Hospital, Newcastle-under-Lyme, Staffordshire:

a Entrance, canopy and draught lobby

b Waiting area

3.0 General functional and design requirements

Introduction

3.1 Chapter 3 provides design guidance based on the service objectives outlined in Chapter 2 and includes information on a range of topics which should be taken into account when designing main entrances. Additional guidance which is common to all health buildings is discussed in Chapter 5.

Main entrance facilities

3.2 The spaces described in this Note are listed in Diagram 1 under "HBN 51". Diagram 1 also includes other spaces which may be associated with the main entrance of a hospital. These are listed under the Health Building Note number in which they are described.

Main entrance ambience

General

3.3 Most people attend hospital during their lifetime. The main entrance is the part of the hospital first seen by patients and their families and forms their initial impressions of the hospital accommodation, the hospital organisation and the quality of service. Designers should do more than provide spaces which satisfy functional requirements: they should aim to create an aesthetically attractive and interesting environment which inspires confidence in the service being offered.

Natural and artificial lighting

3.4 Windows to the main entrance are important not only because they admit natural light, but also because they can provide interesting views, which should be enhanced by skilful design of the approach to the hospital, landscaping and adjacent courtyards.

3.5 The interior of the main entrance should be light and pleasant and the general level of illumination adequate. A variety of lighting arrangements may be necessary for different functions or particular activities; for example, to draw attention to the location of a particular space or group of spaces. Spaces where patients sit and staff work should have the benefit of natural light. Because natural lighting is variable in quality and quantity the provision of a comprehensive artificial lighting installation is essential. Artificial lighting should enhance the quality of the accommodation and complement the interior design and decoration.

3.6 The orientation of accommodation is an important consideration in any building scheme. Sunlight within the main entrance enhances colour and form and helps to make spaces bright and cheerful. Glare should be minimized and may be controlled by curtains and blinds. Solar gain can be mitigated by external screens or by architectural detailing of the shape of windows and depth of reveals.

Courtyards

3.7 The appearance of the main entrance may be enhanced by the provision of access to courtyards from the main waiting area, the concourse and the refreshments area. Courtyards can afford pleasant sitting out areas, and, in the refreshments area, a space where, in fine weather, people may consume light refreshments and beverages. Suitable layout and planting can help to preserve privacy of adjacent spaces. Ground cover planting is often more successful than grass and is easier to maintain.

3.8 Thresholds should be designed to facilitate movement of disabled people. Adequate water points, power points and lighting, if necessary, should be provided in all courtyards. Reference should be made to HBN 45 – 'External works for health buildings' (in preparation) for more detailed guidance on this subject.

Location on hospital site

3.9 The location of the main entrance should be:

a. considered together with site access, site traffic, setting-down points and car parks (see HBN 45 – 'External works for health buildings' - in preparation);

b. convenient for use by patients, visitors and staff, who may arrive on foot or by ambulance, bus, taxi or private vehicle.

Location in relation to wards and departments

3.10 Principal criteria for the location of the main entrance in relation to wards and departments are:

a. that people should be able to reach their destination as easily and directly as possible;

HBN 51

Entrance canopy

Draught Lobby

Enquiry/information counter

Concourse & Public Telephones

Main Waiting Area

Transport - Waiting Area

Refreshment Area - Snack Bar
- Store
- Seating

Parking Bay - Trolley/Wheelchair

Ambulance Liaison Officer's Office

Voluntary Workers Room

Shop with store

WC - Male & Female 4
- Wheelchair 2

Baby Feeding and Nappy Changing Room

Cleaner's Room

Switchroom

HBN 29

Out - patient Dispensary

HBN 47

Admissions Office

HBN 48

Telephone Service spaces

HBN 51 Supp

Head Porter's Office
Porters Room
Security Office
Postal Sorting Room & Trolley Park
Ambulance Staff's Duty Room
Chapel and Vestry
TV/Radio Apparatus Room
Patients Library & Store
Hospital Broadcasts' Studio

Diagram 1. Spaces which are, or may be, associated with the Main Entrance to a hospital : see paragraph 3.2

b. that routes between wards and departments should not cross the main entrance;

c. that there should be easy access to:

(i) the rehabilitation/therapy department, at ground floor level (see HBN 8 – 'Rehabilitation - accommodation for physiotherapy, occupational therapy and speech therapy');

(ii) the out-patients department, preferably at ground floor level (see HBN 12 – 'Out-patients department', HBN 12 Supplement 1 – 'Genito urinary medicine clinics', and HBN 39 – 'Ophthalmic clinic');

(iii) the adult day care ward (see HBN 36 – 'Accommodation for adult day care patients').

Planning and design

3.11 Upon entering the main entrance, either from the outside or the inside of the hospital, the purpose of each space should be immediately evident. In particular, it is important that the enquiry and information counter, the waiting areas, the refreshments area and public toilets are easily recognized. A clearly defined transport waiting area, for example, enables staff easily and rapidly to monitor the arrival and departure of patients.

3.12 Signposting should ensure that directions to all parts of the hospital are clear and reduce to a minimum the number of people who need to enquire: however, too many signs can confuse. HBN 40 – 'Common Activity Spaces Volume 2 Corridors', and the Health Signs Manual issued in November 1984 as Health Technical Memorandum 65, should be consulted for general guidance.

3.13 Patients and visitors, including those in wheelchairs, using walking aids and with prams and wheelchairs, should be able to enter and move easily in spaces provided for their use. Comments in paragraph 2.3 on traffic flow should be borne in mind when designing the concourse and waiting areas.

3.14 Consideration may be given to the installation of low level background music and a video/TV system. Appropriate music and videos can help people to relax and relieve boredom; videos may be included which feature health promotion issues.

3.15 It is essential that entrance doors and main entrance facilities are suitable for disabled people who have problems of mobility or orientation. This includes, besides the wheelchair bound, those who for any reason have difficulty in walking and those with a sensory handicap such as a visual or hearing impairment. Waiting areas should have sufficient space for patients in wheelchairs and for people using walking aids. Handrails may be provided on long runs of wall in circulation areas. WCs for disabled people should conform with the requirements set out in HBN 40 – 'Common Activity Spaces Volume 4 Designing for Disabled People', which includes a set of Ergonomic Data Sheets on access, space and equipment relating to disabled people in health buildings.

3.16 Authorities are reminded of the need to comply with the provisions of:

The Chronically Sick and Disabled Persons Act 1970;

The Chronically Sick and Disabled Persons (Amendment) Act 1976;

The Disabled Persons Act 1981;

The Disabled Persons (Services, Consultation and Representation) Act 1986;

The Building (Disabled People) Regulations 1987.

Attention is also drawn to BS5810: 1979 'Access for the Disabled to Buildings' (under review). One of the effects of the 1981 Act is to apply this British Standard to premises covered by the 1970 Act, which includes those open to the public. Practical guidance for complying with the Building (Disabled People) Regulations is issued by the Department of the Environment under Approved Document 'M': Access for the Disabled.

3.17 Doorways should be wide enough to allow clearance for people using walking aids and for wheelchairs. The main entrance should not be a normal access route for patients on beds but all door openings to the hospital street and corridors linking other departments must be wide enough and high enough to allow the passage of beds and attached equipment, for example, orthopaedic attachments and drip poles. Lever handles, if fitted, should be 900mm above floor level. When glazed doors are provided, the size and height of the glass panels should be appropriate to requirements for visibility and privacy.

3.18 In an emergency, it must be possible to gain access to occupied WC cubicles from the outside (see SIB (85) 60). Doors should be fitted with easigrip bolt handles. Bi-fold doors are not suitable. Reference should be made to HTM 58 – 'Internal Door Sets' and HTM 59 – 'Ironmongery' for information on suitable components and for further guidance.

Fire safety

3.19 It is important to establish during the design process those aspects of fire safety strategy which affect the design, configuration and structure of a project. At appropriate stages, the architect and engineer should

discuss and verify their proposals with the local fire authority, and ensure that the project team and all other planning staff are fully acquainted with the fire safety strategy for the main entrance in terms of operation (staff responsibilities, etc.), equipment provision, and buildings and engineering layouts. Reference must be made to FIRECODE (see paragraphs 5.3 to 5.5), especially Health Technical Memorandum 81 – 'Fire precautions in new hospitals'. Health Technical Memoranda 57, 58, 59 and 60 give detailed information on the selection of fire resisting components.

3.20 If commercial premises are to be included in any part of the main entrance then the requirements set out in Department of Health guidance on fire precautions for commercial premises in hospitals (PL/CE(89)2 dated December 1989 and PL/CE(89)2 AMENDMENT dated February 1990) must be observed.

Internal environmental considerations

3.21 This section enlarges upon general environmental considerations; specific and technical aspects are dealt with in Chapter 6.

Internal rooms

3.22 Internal rooms in some respects contribute to economy in planning, but because they require artificial lighting and mechanical ventilation, capital and running costs are increased. Internal rooms are suited for activities which demand a controlled environment, or, though in constant use, are used intermittently by different individuals. Project teams should decide which activities can be accommodated in internal rooms.

Windows

3.23 The design of windows must reconcile different needs and satisfy various statutory requirements. The following aspects require consideration:

a. illumination and ventilation;

b. insulation against noise;

c. thermal loss or solar gain (see 'Low Energy Hospital Study Report', Volume 2, Section D);

d. energy conservation;

e. the prevention of glare;

f. the size and height of glass panels. External areas should be visible to people who are seated.

3.24 Design should ensure that it is possible for cleaners to have easy access to the inside and outside of windows. Advice on all aspects of the design of windows in health buildings is available in HTM 55 – 'Windows'.

Ventilation

3.25 At the main entrance, problems resulting from smoking and draughts have to be addressed.

3.26 Health Circular HC(85)22 dated May 1985 – WHC(85)31 dated June 1985 in Wales – provides guidance about smoking in health premises. While recognising that the responsibility for determining local policies rests with the health authority, the circular recommends that smoking should be restricted as far as is practicable and, where it is permitted, confined to specially designated areas which are clearly signposted. If part of the waiting area is reserved for smokers, the design of the ventilation system for that area should ensure that the spread of odours to other parts of the waiting area, concourse, and other facilities is prevented.

3.27 Designers should aim to minimize draughts at the entrance lobby and prevent them altogether at locations such as waiting areas.

3.28 Acceptable natural ventilation may be obtained without excessive window openings which could prejudice safety, security and comfort. Section 2.3 of HTM 55 – 'Windows' and BS5925 – 'A Code of Practice for Design of Buildings' and CIBSE Symposium – 'Natural Ventilation by Design' (2.12.80) provide further information.

Heating

3.29 Space heating should be responsive to the needs of patients and visitors, especially those using waiting areas. It should be designed for continuous operation and should be available during the summer months for use on cold days and nights. Heat emitters should not create an obstruction and should be free of sharp edges and easy to clean.

Noise

3.30 Noise can be reduced by soft floor coverings, curtains, furniture and acoustic treatment of walls and ceilings. Areas which are likely to be noisy should be designed and furnished appropriately.

Flooring, finishes, fixtures, fittings, furniture and furnishings

3.31 All spaces in the main entrance should be efficient and comfortable. The draught lobby, concourse, waiting areas and refreshment area (seating) should also be of a high aesthetic standard. Floor coverings, finishes, fixtures, fittings, furniture and furnishings should form an integral part of the design, and should be selected for their aesthetic quality, as well as their durability and reliability. Cleaning regimes should be considered when materials are selected. Fixtures, fittings and furniture with sharp corners are a common cause of injury and should be avoided.

3.32 Floor coverings should contribute to the creation of an attractive environment but should not present a hazard to disabled people or restrict the movement of wheeled equipment. It is important that the floor coverings chosen can be effectively cleaned, maintained and repaired without disrupting main entrance activities. Rapid developments in soft floor covering technology have produced a wide variety of new materials. Floors should not be, or appear to be, slippery, and the patterning should not induce disorientation. However, variation in the colours and patterns of flooring may assist the definition of spaces associated with particular functions. In conjunction with signposting, floor finishes may provide directional cues to patients and visitors. Changes of floor level should be avoided wherever possible. Surface drag, static electricity, flammability, infection hazards and impermeability are other factors which should be considered.

3.33 The likely occurrence and effects of accidental damage in the main entrance should be considered. Damage in health buildings has increased over the years due to the use of heavier mechanical equipment for the movement of patients and supplies and, to some extent, as a result of lightweight, often less robust, building materials. Most damage to doors and floor and wall surfaces is caused by wheeled traffic; this can be reduced by protective corners, buffers and plates, and soundly constructed floors. Protective devices should be capable of renewal as need arises. Reference should be made to the relevant British Standards, to the advice in the Department's DS (Supply) letter 42/75 dated 5th August 1975 on the buffering of movable equipment, and to the guidance contained in HBN 40 – 'Common Activity Spaces Volume 2 Corridors'. Further information is provided in Health Technical Memoranda 56 – 'Partitions', 58 – 'Internal Doorsets' and 61 – 'Flooring'.

Provision for automatic data processing (ADP)

3.34 Information technology has a central role in health management. The use of computers and telecommunications, and the rate of technological innovation, continues to increase. The implications for project teams are threefold: firstly, a requirement for the housing of the computers; secondly, a requirement for the provision of ducts for transmission cabling; and thirdly, sufficient space and adequate power supplies for modems, visual display terminals and printers, and storage for associated software and stationery. Even if the introduction of ADP is not proposed at the time that the project team completes its brief, it is advisable to design in such a way that equipment can be introduced easily and quickly at some later date.

3.35 There are two principal matters of concern: visibility, and noise. Sufficient and convenient space must be provided for visual display terminals; also, since the brightness of the text displayed on the screen cannot exceed a certain limit, special attention must be given to the ambient lighting to ensure that the contents of the screen are legible. Additional space will be required in front of the screen for a keyboard. Printers are often noisy, but this may not be a problem in the main entrance.

3.36 Computer expertise is widely available in the NHS and project teams should ensure that, at an early stage, they inform themselves concerning current and projected local computing policies; and that their proposals conform with them.

4.0 Specific functional and design requirements

Introduction

4.1 Chapter 4 provides guidance on the functional requirements and design implications for each space required in the main entrance.

4.2 Lists of activities and equipment and details of environmental conditions and finishes of walls, floors and ceilings are presented in the Activity Data Sheets (Chapter 8). Reference should also be made to the relevant Health Technical Memoranda covering Component Data (see paragraph 5.18).

Description of accommodation

Entrance canopy

4.3 The canopy over the entrance should be large enough to afford adequate weather protection for patients alighting from vehicles, and be high enough to clear lights and aerials on ambulances. This space should be adequately lit.

Draught lobby

4.4 Access to and from the main entrance should be through a draught lobby enclosed by automatic doors. The lobby should be large enough:

a. to allow people to stand aside to permit the passage of a disabled person with an assistant;

b. to accommodate a stretcher and attendants with both sets of automatic doors closed. One set of automatic doors should be able to close before the other set opens.

A method of reducing the amount of dirt carried by footwear and on wheels should be incorporated into the design of the lobby. (See also paragraph 3.31.)

Trolley and wheelchair parking bay

4.5 A bay for parking trolleys and wheelchairs should be convenient for use by porters and should not encroach on the concourse or circulation space.

Enquiry and information counter

4.6 After entering the hospital, many patients and visitors go to the enquiry and information counter. The staff or voluntary workers based there may also deal with general telephone enquiries to the hospital.

4.7 Provision of a counter with facilities for a minimum of two receptionists will be appropriate. The design of the counter is for local decision: it may be open or enclosed but must ensure staff comfort and safety. The worksurface and associated storage should be sufficient for computer terminals and possibly the handling and storage of printouts. The counter should be easily seen from the entrance doors.

Main waiting area

4.8 The waiting area is used by patients, escorts and visitors. A range of types of seating is required, including some for elderly people and some for children. In addition, there should be sufficient space for patients in wheelchairs and for people using walking-aids. The public toilets should be located here or nearby. (See also paragraph 3.31.)

Transport waiting area

4.9 A separate area, with easy access to the entrance doors and within sight of appropriate members of staff, should be reserved for people awaiting ambulance transport. (See also paragraph 3.31.)

Ambulance liaison officer's office

4.10 The ambulance liaison officer is responsible for co-ordinating the return journeys of patients. It should be possible to directly observe the transport waiting area from the office. A Type 3 office work-station, as described in HBN 18 – 'Office accommodation in health buildings', is appropriate for the officer's administrative and clerical work, with additional provision for ambulance communication equipment.

Concourse

4.11 The concourse is a space of major importance to the hospital's communication and circulation routes:

a. from the main entrance to wards and departments;

b. to other spaces in the main entrance.

It should be large enough to allow people to move about with ease, including those who are disabled, in wheelchairs and using walking aids. The public telephones should be located here.

4.12 A pleasant interior design may be enhanced by pictures, sculpture and murals, by indoor plants, and by views to external landscaping. Clear signposting is essential. The main notice board for the hospital should be located here. Displays and exhibitions may be held in the concourse. It is to this space, perhaps more than any other, that the discussion in paragraph 3.31 applies.

a

b

City General Hospital, Stoke-on-Trent:

a Main entrance and canopy

b Information counter

Voluntary workers' room

4.13 The importance of voluntary workers in the running of the hospital is made clear in paragraph 2.9. In this space, reserved for them, they may carry out administrative work, securely store outer garments, overalls and small items of personal belongings, and sit comfortably and relax. Voluntary workers who provide a trolley sales service to wards and departments should be allocated space in the store in the refreshment area to manoeuvre, load and park a trolley, and to store stock (see paragraph 4.17).

Refreshment area: snack bar

4.14 The snack bar for the sale of light refreshments and beverages, with an adjacent refreshment seating area, should be close to the waiting areas; it should include a servery and a preparation area.

4.15 The servery should include a range of counter units for the storage, display, service and sale of hot and cold snacks and cold drinks. The preparation area should be equipped with facilities for:

a. the preparation of hot drinks;

b. the storage of dry goods, crockery and cutlery;

c. refrigerated storage;

d. washing-up;

e. hand washing.

Refreshment area: seating

4.16 The seating area, where people may sit at tables to consume food and drinks, may also accommodate vending machines, and water and cup dispensers. The quality of the flooring, finishes, fixtures, fittings, furniture and furnishings should be consistent with the design philosophy described in paragraphs 3.31 to 3.33.

Refreshment area: store

4.17 A store for dry goods near the snack bar should also serve as a base for a trolley sales service to wards and departments. The space should be sufficient for parking and manoeuvring a trolley. Part of the store may be reserved for clerical work.

Shop and store

4.18 This Note includes a cost allowance for one shop and associated store. Specific use of the area is left for local determination; appropriate types of business include selling newspapers, books, flowers, gifts or health foods. Some vendors have special requirements, such as a cool room for flowers and access for deliveries.

4.19 The generation of income by leasing space to private traders is subject to negotiation by the health authority.

WCs

4.20 Separate WCs for men and women (available for use by patients, escorts, visitors and staff) should be directly accessible from the concourse. One of each should be designed specifically for people who are disabled.

Baby feeding and nappy changing room

4.21 A room where a baby can be breast or bottle fed and have a nappy changed, in privacy, should adjoin the public toilets and have access direct from the concourse. Seating and facilities for the disposal of soiled nappies and other waste are required. Handwashing facilities should also be provided.

Cleaners' room

4.22 A ventilated and secure room should be equipped for the storage and daily maintenance of mechanical cleaning equipment and the storage of cleaning materials. Coat hanging and small lockers may be required. (See HBN 40 – 'Common Activity Spaces Volume 1 Example layouts; Common components'.)

Switchroom or cupboard

4.23 A switchroom or cupboard is required to accommodate the electrical installation control equipment. The room should be dry and well-ventilated; and the door should be lockable, and open outwards. If an electricity supply of adequate capacity is conveniently available from an existing switchroom, secure sub-distribution switchgear cupboards will suffice.

5.0 Additional guidance

Introduction

5.1 This Chapter contains additional guidance concerning aspects of function and design common to all health buildings, which should be borne in mind when providing new buildings or upgrading existing premises.

Statutory and other requirements, including Crown immunities

5.2 This Note takes account as far as possible of all statutory and other requirements in force at the time of publication, but health authorities are reminded of their responsibility for ensuring compliance with all relevant statutes, regulations, codes and standards. Advice on this is given in HC(88)60/HC(FP)(88)29-in Wales, WHC(89)20.

With the general removal of Crown immunity from the NHS from 1 April 1991 and the setting up of NHS Trusts, building and planning law are legally enforceable on the NHS. Guidance on the removal of Crown immunity is given in HN (90)27/LASSL(90)15 - in Wales, WHC(91)4 - in respect of a wide range of legislation.

Fire precautions

5.3 It is essential that project teams familiarise themselves with the guidance contained in the FIRECODE series of documents which together give the Department's policy and technical guidance on fire precautions in hospitals and other NHS premises. In particular, the need for structural fire precautions and means of escape from the whole accommodation must be taken into account at the earliest possible planning stage. The key document for these aspects in hospitals is FIRECODE: 'Fire precautions in new hospitals', Health Technical Memorandum 81.

5.4 In addition, basic policy, principles and key management guidance are contained in FIRECODE: 'Policy and Principles'. Other FIRECODE documents include the Health Technical Memoranda '80' series (which give technical guidance on various building, engineering and equipment issues), the Fire Practice Notes series (dealing with various specialist aspects of fire precautions) and Nucleus guidance. Existing HTMs will, in due course, be reissued in FIRECODE format. The series includes FIRECODE: 'Directory of Fire Documents' which lists references to relevant legislation and relevant fire precautions guidance issued by DH and other sources, for example, the Home Office.

5.5 FIRECODE and publications in the HTM '80' series are listed in the bibliography at the end of this Note.

5.6 The principles of fire safety apply equally to new projects and to alterations and upgrading of existing buildings.

Upgrading or adaptation of existing buildings

5.7 The standards set out in this guidance essentially apply to the provision of accommodation by new building and it is not intended that they should be applied retrospectively to existing stock. However, the principles are equally valid and should be applied, so far as is reasonably practicable, when existing accommodation is being upgraded or new accommodation is being constructed within an existing building, which may previously have been used for other purposes.

5.8 The cost of upgrading work should conform to the guidelines indicated in the Department's WKO letter (81)4 - in Wales, AWO(81)8. Those guidelines take into consideration the estimated life of the existing building and the difference in cost between upgrading a building and new building.

5.9 Before any decision is made to carry out an upgrading project, consideration must be given to the long-term strategy for the service, the space required for the new service, and the size of the building. Regard must also be paid to the orientation and aspect of the building and the adequacy and location of all necessary support services.

5.10 If a prima facie case for upgrading is established, a thorough analysis of all functional and physical conditions of the existing building should be undertaken.

5.11 When comparing the cost of upgrading or adapting an existing building with that of a new building, in addition to the building cost, due allowance must be made for the cost of relocating people, demolition and salvage costs, disruption of services in a phased project, and the temporary effects on running costs of any impaired functioning of areas affected by upgrading.

5.12 The check of physical and other aspects of existing buildings should include:

a. availability of space for alterations and additions;

b. type of construction;

c. insulation;

d. age of the buildings, condition of fabric, e.g., external and internal walls, floors, roofs, doors and windows, which may be determined by a condition survey;

e. life expectancy and adequacy of engineering services, ease of access and facility for installation of new wiring and pipework, if required;

f. the height of ceilings (high ceilings do not necessarily call for the installation of false ceilings which are costly and often impair natural ventilation);

g. changes of floor levels to obviate hazards to disabled people;

h. fire precautions;

j. physical constraints to adaptation such as load-bearing walls and columns.

5.13 Having decided that existing premises are suitable for upgrading or conversion, the main task is to assess how best the accommodation can be adapted.

5.14 The main environmental factors which should be considered are the same as for new building.

5.15 Upgradings must conform to current fire safety and other statutory regulations. It is very difficult to estimate the fire resistance of floors, walls and doors of existing buildings.

5.16 This summary of the main aspects of upgrading is general in character and it is recognised that each upgrading project will present its own individual problems. In many instances compromises may have to be made between Building Note recommendations, and what is possible in practice. Upgradings should be functionally sound - not merely cosmetic - and appropriate for the projected needs of patients and staff for a number of years to come.

Component data

5.17 The Component Data Base consists of a series of Health Technical Memoranda (HTMs) which provide specification and design guidance on building components for health building which are not adequately covered by current British Standards. No firms or products are now listed. The numbers and titles of the HTMs in the series are listed in the bibliography.

6.0 Engineering services

Introduction

6.1 This Chapter describes the engineering services contained within a main entrance and their integration with the systems serving a whole site. Its purpose is not to inhibit the design solution but to acquaint the engineering members of the multi-disciplinary design team with the design criteria, material specifications, and reference data needed to meet the functional requirements.

6.2 Documents referred to by number, e.g.[10] are listed at the end of the Chapter. They are numbered in order of first appearance, repeated references retaining the same number.

Model specifications

6.3 A series of model specifications for the specialised engineering services in health care buildings have been issued nationally and are sufficiently flexible to reflect local needs. The cost allowances for the engineering services in this accommodation are based on the qualities of material and workmanship described in the relevant parts of the model specifications.

Economy

6.4 Engineering services are a significant proportion of the capital cost and thereafter remain a continuing charge on revenue budgets. Therefore the project design engineer should ensure not only the utmost economy in initial provision, consistent with meeting the functional requirements and maintaining clinical standards, but also the optimum benefit from the total financial resources these services are likely to absorb during their lifetime.

6.5 Where alternative design solutions are available, their consequential capital and running costs should be compared using option appraisal techniques[1] so that due consideration is given to the need for, and the costs of, maintenance and the eventual replacement of plant and equipment.

6.6 The economic appraisal of alternative design solutions should include the heat conversion and distribution losses at the point of use. Where buildings are located remote from the developments load centre, these losses can often equal the useful energy consumed.

6.7 In any new project, consideration should be given to energy management and the facilities offered by a Whole Hospital control system to enable some measure of energy accounting to be exercised at departmental level.

6.8 After satisfying the Building Regulations[2] on the standards of thermal insulation provided, consideration should be given to the economics of additional insulation to the ground floor slab and to the roof (Engineering Data Sheet CE7[3] refers), particularly where accommodation is located in a building of low-rise construction. Where there is a solidly constructed ground floor, the inclusion of floor insulation will also contribute to patient and staff comfort. Guidance concerning the economic thickness of thermal insulation relative to the cost of energy, 'K' values, temperature differences, capital costs and hours of use is given in Engineering Data Sheet CE11[4].

6.9 Similarly, in view of the increasing costs of generating heat energy, consideration should be given to the economics of appropriate equipment for recovering some of the value of the energy which would otherwise be discharged by mechanical ventilation systems. The programmed turning off, or reduction, of heating and ventilation in those spaces used only for part of the day should also be considered (see paragraph 6.26).

Maximum demands

6.10 User demand on engineering services is often difficult to predict, but experience indicates that services designed for simultaneous peak conditions are seldom fully utilised in practice. The estimated maximum demand and storage requirement (where appropriate) for each engineering service in this accommodation will need to be assessed individually to take account of the range, size and shape of the functional units, geographical location, operational policies and intensity of use. As a guide, and for preliminary planning purposes only, the following are the estimated maximum demands for a main entrance for a District General Hospital:

Service	Typical Max. Demand	Remarks
Heating, Ventilation (LPHW)	30 kW	
Domestic hot water	0.60 litre/sec	Storage 260 litres (2 hour recovery)
Cold water supply	1.00 litre/sec	Storage 2100 litres (24 hour supply)
Supply ventilation	0.72 m^3/sec	
Extract ventilation	0.72 m^3/sec	Includes 0.14 dirty extract
Electrical	22 kW	Includes 19 kW essential
Piped medical gases	No requirement	
Fuel gas	No requirement	
Steam	No requirement	

Space requirements for services

6.11 The satisfactory performance of plant in health care buildings is particularly important and the design should allow for ease and safe means of access and space for the necessary frequent inspection and maintenance and for eventual removal and replacement. As far as practical, however, this access should be protected from unauthorised entry.

6.12 Recommended spatial requirements for mechanical, electrical and public health engineering services in health buildings are given in Health Technical Memorandum (HTM)23[5]. The information in HTM 23 is specifically intended for use during the initial planning stages when precise dimensional details of plant are not available.

6.13 The distribution of mechanical and electrical services to final points of use should, wherever possible, be concealed in ducts and above ceilings. Heat emitters should be contained within a 200mm wide perimeter zone under window sills and critical dimensions should be taken from the boundary of this zone. For costing purposes the 200mm band, which includes the floor area occupied by minor vertical engineering ducts, is included in the building circulation provision.

Activity Data

6.14 User requirements, environmental conditions and equipment arrangements, as described in the Activity Data Sheets (see Chapter 8), should be referred to when positioning service components and outlets.

Safety

6.15 Section 6 of the Health and Safety at Work Etc Act 1974[6], as amended by Schedule 3 of the Consumer Protection Act 1987[7], imposes statutory duties on all persons who design, manufacture, import, supply, install or erect "articles for use at work". One of the requirements of this Section is to ensure, so far as is reasonably practicable, that the article is so designed and constructed that it will be safe and without risks to health at all times when it is being set, used, cleaned or maintained by a person at work. All parts of engineering systems are covered by the term "articles for use at work" and designers of these systems for health care premises must therefore fulfil their statutory obligations.

Fire precautions

6.16 Design guidance relative to the fire precautions in new hospitals is given in HTM 81[8]. Technical information concerning the design and specification of fire detection and alarm systems is detailed in HTM 82[9], which also replaces or modifies certain clauses of BS5839 Part 1[10] to meet the needs of health care premises. More general advice on fire prevention, including the storage of flammable materials, is given in HTM 83[11].

6.17 The design of the engineering services should accord with the recommendations in the above HTMs and the engineer should verify his proposals in accordance with the procedure described in paragraph 3.19.

Noise

6.18 Excessive noise in the individual areas, whether internally or externally generated and transmitted, can adversely affect the operational efficiency of the department and can cause discomfort. The limits and means of control advocated in Hospital Design Note 4[12], including its revisions[13], and the means of control given in Engineering Data Sheet DH(1)[14], should provide an acceptable acoustic environment. In addition to designing for control of noise levels, there may also be a need to ensure speech privacy, i.e. that confidential conversation is unintelligible in adjoining rooms or spaces. This will typically, but not exclusively, be required in interview

rooms. The acceptable noise level and any requirement for speech privacy, where applicable, in the individual spaces in this department is shown on the Activity Data A-Sheets.

Control access

6.19 Primary engineering distribution control and isolation devices should be protected against unauthorised operation, e.g. switchgear and fuse-boards should be housed in secure cupboards. They should be located in circulation rather than working areas and, where appropriate, should be easily accessible for staff operation.

Engineering commissioning

6.20 It is most important that engineering services should be fully commissioned. HTM 17 [15] describes the requirements which should be included in the design and construction contract documents. Flow measurement and proportional balancing of air and water requires adequate test facilities, e.g. orifice plates, venturi valves, etc., to be incorporated at the design stage.

MECHANICAL SERVICES

6.21 The mechanical services include the provision of heating, ventilation, hot and cold water supplies. For cost allowance purposes the distribution of the heating, hot and cold water and ventilation systems is deemed to commence at their point of entry into the department and includes pipework, ductwork, fittings, controls and connections to equipment and terminal outlets. The cost allowances also assume that a main entrance is unlikely to be a self contained department and therefore that all mechanical services are likely to be connected to the sub-systems serving adjoining accommodation.

6.22 For environmental requirements in individual spaces, reference should be made to the Activity Data Sheets. Recommended room temperatures, air change rates, hot water service temperature, etc., are grouped under "Technical Design Data" on each A-Sheet. The B-Sheets give the disposition of engineering outlets for the activities described.

Heating

6.23 General space heating requirements can usually be met by low pressure hot water radiators operating as a sub-system from the primary heating distribution system. The baby feeding and nappy changing room, as detailed on the Activity Data Sheet, will require the provision of low surface temperature heating, utilising a convector or enclosed radiator designed to ensure that the surface temperature does not exceed 13°C.

6.24 Radiators should normally be located under windows or against exposed walls, with sufficient clear space between the top of the radiator and the window sill to prevent curtains reducing the output and adequate space below to allow cleaning machinery to be used. Where a radiator is located on an external wall, back insulation should be provided to reduce the rate of heat transmission through the building fabric.

Temperature controls

6.25 To facilitate overall temperature control, the heating system flow temperature should normally be varied via an external compensator, and thermostatic valves should be installed on all radiators. These valves should be of robust construction and selected to match the temperature and pressure characteristics of the heating system. The thermostatic head, incorporating a tamper-proof facility for presetting maximum and minimum room temperature, should be controlled via a sensor located integrally or remotely as appropriate. Where space is restricted or heat gains and/or losses are particularly variable, consideration should be given to the provision of thermostatically controlled fan-convectors fitted with low-limit control, but only where the generated noise is unlikely to be a nuisance.

6.26 The heating systems serving the main entrance should be equipped with time switch control programmed to cater for the opening hours of this accommodation as determined by local operational policies. (It is expected that 24 hour access will be restricted to the separate entrance serving the Accident and Emergency Department.) The control system, preferably incorporating an optimum start device, should be used to set-back the space temperature to an anti-condensation level of approximately 10°C when the accommodation is closed (actual set-back to be determined from local trials). To allow occasional abnormal hours of working, a conveniently sited manual override time restricted switch may be provided so that the heating can be restored promptly to its full operational state.

Ventilation

6.27 Recommendations for the ventilation of individual spaces in this accommodation are shown on the Activity Data A-Sheets. Mechanical ventilation systems are expensive in terms of capital and running costs and planning solutions should be sought which take maximum advantage of natural ventilation. It is acknowledged that

planning constraints imposed by the building shape and/or functional relationships of specific spaces will invariably result in some measure of enclosed internal areas. Ventilation costs can however be minimised by ensuring that wherever practicable core areas are reserved for rooms that require mechanical ventilation irrespective of whether their location is internal or peripheral. Examples are: sanitary facilities, and rooms whose functional requirements have specific environmental needs and where, for reasons of privacy and absence of solar gain, etc., windowless accommodation is acceptable. Other spaces appropriate to core areas are those which have only transient occupation and therefore require little or no mechanical ventilation. Examples are circulation and some storage areas.

6.28 Air movement induced by mechanical ventilation should be from clean to dirty areas, where these can be defined and should generally be arranged to encourage uniform air movement within the space. The design should allow for an adequate flow of air into any space having only mechanical extract. Transfer grilles should be provided in doors or walls to connect such spaces to either naturally ventilated corridors or other spaces with mechanical air supply. Such arrangements, however, should avoid the introduction of untempered air and should not prejudice the requirements of fire safety or speech privacy.

6.29 The fresh air supply should be tempered and filtered before being distributed via high level grilles with output profiles designed to avoid discomfort to the occupants. Ventilation supply plant should include air filters having a minimum arrestance of 85%, and a minimum average dust spot efficiency of 25%, when tested in accordance with BS6540 Part 1[16]. Filters must be readily accessible for replacement and maintenance purposes and provided with a pressure-differential indicator; coarse pre-filters may be necessary where the intake air is exceptionally polluted. Heater batteries should be sized for the ventilation requirements only, i.e., not the building fabric loss. All heater battery coils should be provided with frost protection.

6.30 Although the automatic doors associated with the entrance lobby will help to reduce the impact of draughts in the concourse and waiting areas, it is recommended that an air curtain device be provided above the inner doors within the concourse area to further mitigate adverse air movements due to draught. Consideration should be given to integrating this device in the mechanical ventilation air supply system rather than providing an auxiliary recirculating unit.

6.31 A separate extract system will be required for "dirty" areas, e.g. sanitary facilities, and a dual motor/fan unit with an automatic changeover facility should be provided to ensure that these rooms are always maintained at a negative pressure when the accommodation is in use.

6.32 External discharge arrangements for extract systems should be protected against back pressure from adverse wind effects and located to avoid re-introduction of exhausted air into the building through air intakes and windows.

Ventilation controls

6.33 Supply and extract ventilation systems should include indicator lamps to confirm the operational status of each system. Where a system is provided for a particular space, the indicator should be in or immediately adjacent to that space and local controls should be provided as appropriate. In the case of a more general system of ventilation, e.g. toilet areas, the indicator should be located where it is visible. Where manual controls are available for staff use they should be provided with labels clearly defining their function.

Hot, cold and drinking water services

6.34 The domestic hot water supply should be taken from the general hospital calorifier installation at an outflow temperature of 60°C ± 2.5°C, and distributed to all outlets so that the return temperature at the calorifier is not less than 50°C.

6.35 Where hot water temperatures of 60°C are required and, due to extensive pipe runs, this cannot be achieved, local booster water heaters, electrically heated, should be considered.

6.36 Guidance concerning cold water supply pipework and distribution systems is given in HTM 27[17]. For frost protection purposes, and to prevent condensation staining decorative finishes, all cold water pipework, valves and flanges should be insulated and vapour sealed.

6.37 To control Legionellae, the water services should be designed, installed and commissioned in accordance with the recommendations in the DHSS Code of Practice[18].

Appearance of mechanical services

6.38 In satisfying the overall design philosophy for an aesthetically attractive environment for users (see paragraphs 3.3 and 3.31), it will be appropriate to consider, in conjunction with the architect and/or interior designer, an enhanced standard of finish to the visually prominent mechanical services terminals and fittings (e.g. ventilation grilles and radiators) in the entrance, concourse, main waiting and refreshment areas. Stove enamelled finishes colour keyed to the overall decor is one possibility and the engineering cost allowances include for such a provision.

ELECTRICAL SERVICES

6.39 The electrical installation will include main intake switchgear, the wiring and equipment for lighting, power, and environmental plant together with the earth bonding of extraneous metalwork. Extensions from the hospital central systems for telephones, clocks, fire alarms and staff location services will also be required. These installations should comply in all respects with the current IEE Regulations for Electrical Installations[19] and conform to the requirements of HTM 7[20].

6.40 Reference should be made to the Activity Data Sheets for the recommended levels of internal illumination and the disposition of outlets for power, telephones, and clocks, etc. in individual spaces.

6.41 The point of entry for the electrical supply will be a departmental switchroom housing the main isolators and the main distribution equipment. The switchroom will also be the distribution centre for subsidiary electrical services and, wherever possible, all equipment should be mounted at a height to give easy access from a standing position. The switchroom should be positioned so as to minimise the cost of cabling required to serve the accommodation.

Electrical installation

6.42 The electrical installation in occupied areas should be concealed, usually using PVC insulated cable in screwed steel conduit or trunking, but, in certain circumstances, mineral insulated copper covered cables may be necessary. External installations should comprise PVC insulated cables in galvanised screwed steel conduit with fittings of weatherproof pattern. Steel conduit and trunking wiring ways for communication systems should also be concealed whenever possible.

Electrical interference

6.43 Guidance concerning the avoidance and abatement of electrical interference is given in HTM 14[21] and fluorescent luminaires (lighting fittings) should comply with BS5394[22].

6.44 Care should be taken to avoid mains borne interference and electrical radio frequency interference affecting computers and other electronic equipment used here or elsewhere on the hospital site.

Lighting

6.45 Practical methods of lighting the various functional spaces are contained in the CIBSE Lighting Guide LG2[23]. The choice of luminaire should take account not only of the requirements for light distribution and visual comfort appropriate to the space, but also the operational efficiency of the light source used. Luminaires should be of a type which are easily cleaned and maintained, as well as being manufactured and tested in accordance with the requirements specified in the relevant sections of BS4533[24]. Their location should be readily accessible for lamp changing and maintenance, with the overriding requirement that the recommended standard of illuminance is provided to the task areas. Luminaires using fluorescent lamps should be installed when artificial lighting is required for long periods or where areas are devoid of natural light; intermittently-used luminaires may be fitted with incandescent or compact fluorescent lamps.

6.46 Control of lighting is normally by local switches and these should be provided in sufficient numbers to allow variation in lighting options, e.g. reduced levels of illuminance when circumstances permit, and to encourage energy conservation. This is particularly relevant in spaces where, because daylight is restricted, supplementary artificial lighting is required for long periods in areas away from windows. However, it is important that excessive contrast with adjacent areas should be avoided.

6.47 In areas where computer terminals are to be used, the lighting should be designed to avoid bright reflections on the screen and to ensure that the contents of the screen are legible. Further guidance can be found in CIBSE Lighting Guide LG3[25].

Lighting of corridors, circulation and waiting areas

6.48 The lighting of corridors and circulation spaces not specifically covered by Activity Data Sheets should be in accordance with the guidance contained in HBN 40 – 'Common Activity Spaces Volume 2'[26].

6.49 To accord with the overall design philosophy for an aesthetically attractive environment for users (see paragraphs 3.3 and 3.31), it will be appropriate to provide general lighting fittings and associated switches to an enhanced standard of finish and some decorative or display lighting features (e.g. illumination of pictures, sculpture or special architectural features) in the entrance, concourse, main waiting and refreshment areas. The details will need to be co-ordinated with the architect's and/or interior designer's overall decor scheme and the engineering cost allowances include for such a provision.

Socket-outlets

6.50 Sufficient 13 amp switched, shuttered socket-outlets, connected to ring or radial circuits should be provided to allow all portable appliances likely to be used simultaneously to be individually supplied. Activity Data Sheets indicate specific locations for the outlets associated with individual activities; the installation of twin outlets should be considered where these activities occur in juxtaposition.

6.51 Depending on local circumstances consideration may need to be given to the quality of the electrical supply at socket-outlets serving computer equipment. It is envisaged that the circuits will be arranged (see also paragraph 6.58) so that regulators, filters or other specialised computer power supply equipment can readily be incorporated either initially or at a later date. The cost allowances do not include for the supply and installation of any such auxiliary equipment.

6.52 Domestic cleaning appliances with flexible leads nine metres long should be assumed and socket-outlets, usually in corridors, should be provided to enable such machines to operate over the whole area of the accommodation.

6.53 Fixed appliances rated up to 13 amp should be permanently connected to double pole switched spur boxes and fused as required. Appliances rated in excess of this load, or those requiring a three-phase supply, should be permanently connected to separate final circuits from fuse-boards and independently switched.

6.54 Local switches or other means of isolation should be provided adjacent to electrical machinery and plant to ensure the safety of operators and maintenance staff.

6.55 Heating appliances, and automatically operated equipment (including the power operated entrance doors), should be provided with indicator lights to show when the equipment is energised. Such indicators should be incorporated in the control panel of the apparatus, in the control switch or in the socket-outlet from which the apparatus derives its supply.

Emergency electrical supplies

6.56 Guidance concerning the provision of emergency electricity supplies is given in HTM 11[27], and the grade of standby lighting provision is on the Activity Data A-Sheets. Safety lighting in accordance with HTM 11[27] and BS5266[28] should be provided on primary escape routes.

6.57 Socket-outlets should be so distributed that, in each area where essential equipment may be used, socket-outlets connected to at least two separate circuits of common phase are available with one circuit connected to the essential electricity supply system.

6.58 All socket-outlets for computer equipment and all communication, clock and alarm systems throughout the department should be connected to the essential electricity supply system.

Staff location system

6.59 The staff location system employed in the hospital should be extended to give adequate cover to the main entrance. Guidance on these systems is given in HTM 20[29].

Telephones

6.60 Central telephone facilities for internal and external calls will normally be available and should be extended to serve the staff accommodation within the main entrance in accordance with the requirements shown on the Activity Data Sheets. Telephones will normally be of the desk pattern.

6.61 It is considered that there is no justification for providing any separate internal communication systems in this accommodation in addition to the automatic telephone facilities.

6.62 In addition, fixed payphones should be provided at a suitable convenient location, which will allow patients, visitors and staff to make prepaid telephone calls via the public network. The level of provision is a matter for local policy.

6.63 To assist patients with impaired hearing, the hand set of payphones should be fixed with an inductive coupler suitable for use with a hearing aid. In addition, at least one payphone should be mounted at a height suitable for a person in a wheelchair.

6.64 All payphones should be connected to separate exchange lines, and not routed via the hospital switchboard. They should have their mode of operation restricted to making outgoing calls only.

6.65 Coin operated payphones will usually be the most convenient for all users, but it is a matter for local policy as to whether prepaid phonecard payphones should be provided. If payphones are restricted solely to the phonecard type, consideration will need to be given to the availability of phone cards and the administrative implications associated with the stocking, security, and sale of these within the hospital.

6.66 Guidance concerning the provision of telephone systems and equipment, including the telephone internal cabling distribution and telephone hand sets, is given in HBN 48[30].

Wireways for data links

6.67 Wireways, which should be segregated from electrical power and telephone cabling distribution systems, will usually be required for computer links between the main hospital computer system and various work-stations in the main entrance. There may also be a requirement for data links to other departments, depending on the local policy for automatic data processing.

Electrical clocks

6.68 Clocks should operate in conjunction with a master clock system. If such a system is not available, synchronous clocks should be installed using a common clock circuit suitable for future connection to a master system. Clocks should be installed only where they can be viewed by numbers of staff/patients/visitors.

Lightning protection

6.69 Protection against lightning should be provided in accordance with HTM 7[20], Engineering Data Sheet DB 2[31], and BS6651[32].

INTERNAL DRAINAGE

6.70 The primary objective is to provide an internal drainage system that uses the minimum of pipework and remains water and air-tight at joints and connections, but is sufficiently ventilated to retain the integrity of water seals.

Design parameters

6.71 General design guidance is given in the relevant British Standards and Codes of Practice, including BS5572[33], and the current Building Regulations[2]. Recommendations regarding spatial and access requirements for public health engineering services are given in Engineering Data Sheet EA5[34].

6.72 The gradient of branch drains should be uniform and adequate to convey the maximum discharge to the stack without blockage. Practical considerations such as available angles of bends/junctions and their assembly, as well as space considerations, usually limit the minimum gradient to about 1:50 (20mm/m). For the larger pipes, e.g. 100mm diameter, flatter gradients can be used but require workmanship of a high standard if adequate self-cleansing flow is to be maintained. It is not envisaged that pipes larger than 100mm diameter will be required within the drainage system serving a main entrance.

Operational considerations

6.73 Unusual and difficult maintenance problems can arise because of user interference and abuse. For example, the disposal of paper towels into WCs after hand-washing or after their misuse for some other purpose, is a frequent cause of blockages particularly in long branches laid to flat gradients. Adequate provision of disposal receptacles or, where appropriate, the installation of warm-air dryers can help to mitigate this problem.

Materials specification

6.74 The materials specified for the drainage system in this accommodation will depend upon their location. Waste pipework should, as far as practicable, be concealed; where exposed, it should be metallic and very securely fixed. Although adequate for the drainage requirements, UPVC may not always be acceptable to the fire officer and it should not be installed above "sensitive" areas, e.g. switchrooms and catering departments.

References

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7.0 Cost information

Introduction

7.1 For all types of health building it is important that building costs and revenue expenditure are kept as low as possible consistent with acceptable standards. Within this general context, Building Notes provide guidance on accommodation for health buildings which the Department of Health, in conjunction with the National Health Service, recommends for the provision of a given service.

7.2 This guidance notes that a function of the main entrance is to inspire confidence in the service being provided by the hospital (see paragraph 3.3). In order to fulfil this purpose, special attention has been given to enhancing certain building elements, such as internal finishes within the entrance, concourse, retain waiting and refreshment areas, to provide the required ambience.

Works cost

7.3 To prepare an estimate of the works cost for a scheme, reference should be made to the Capricode Health Building Procedures manual (Chapter 1, Stage 1, Annexe 1.c). The total departmental cost for a scheme is derived by aggregating the cost of the functional units and Optional Accommodation and Services as appropriate to the particular scheme.

7.4 The cost allowance covers the building and engineering requirements set out in this Note. It is clear that a main entrance will always be associated with the hospital it serves, and the cost allowance has been calculated to account for the connection of building and engineering elements to the rest of the building.

Functional unit

7.5 There is no functional unit for a hospital main entrance. The amount of use made of a main entrance depends upon the relative location of hospital departments (see paragraph 2.3), and external features, such as car parks. Nevertheless, the spaces described in this Note will be required for all main entrances.

7.6 Guidance covering the provision of external entrances to a single department, or to a small group of departments not requiring the full facilities of a main entrance, can be found in the supplement to this Note HBN 51 Supplement 1- 'Miscellaneous spaces in a District General Hospital'.

Dimensions and areas

7.7 In determining spatial requirements, the essential factors are the critical dimensions, i.e. the minimum linear dimensions within which activities may be performed with reasonable efficiency. The area required for an activity space is the product of the critical dimensions.

7.8 The schedule of areas given at the end of this Chapter was prepared for the purpose of establishing the cost allowance. It is emphasised that the areas published **do not** represent recommended room sizes, maximum or minimum allowances, nor are they to be regarded in any way as specific individual entitlements

Circulation

7.9 Space for circulation, which includes allowances for planning provision, engineering zone and partitions, has been added to the schedule of areas and is included in the cost allowance.

Communications

7.10 Staircases, lifts and plant rooms, with the exception of electrical switch cupboards, are not included in the cost allowance. Corridors within the main entrance, but not any linking it with other departments, are included in the allowance.

Engineering spaces

7.11 The works cost allows for the provision of space for a heating and ventilating zone adjacent to the external walls and for small vertical ducts. This space is included, together with the planning provision, as part of the circulation shown in the schedule of areas.

Engineering services

7.12 The following engineering services, as described in Chapter 6 and listed in the Activity Data, are included in

the cost allowances. Primary engineering services are assumed to be conveniently available at the boundary of the department.

a. **Mechanical services**

Heating: Low pressure hot water. Maximum surface temperature 82°C, but 43°C in nappy change room.

Ventilation: Mainly natural but with mechanical supply and extract to meet functional requirements of toilets and internal spaces.

Cold water service: Centrally supplied to service points including drinking water and fire hose reels. Storage tanks excluded.

Hot water service: Centrally supplied to service points. Storage excluded.

b. **Electrical services**

Departmental distribution switchboard.

General lighting as required by tasks. Some feature/ decorative lighting in concourse, main waiting and refreshment areas.

Fluorescent, tungsten, safety and emergency luminaires as appropriate.

Socket-outlets and other power outlets for fixed and portable equipment.

Supplementary equipotential earth bonding connections.

Standby and safety installations from the main hospital supplies.

Fire alarm system.

Impulse clocks.

Staff location - extension to the hospital system.

Telephone internal cabling distribution and outlets. Handsets excluded.

Trunking and conduits only for data transmission.

c. **Equipment (Group 1)**

Catering equipment: Range of stainless steel counter units complete with heated and refrigerated display cases, sink unit and double drainer, and beverage section with water boiler.

Chilled drinking water dispenser.

Schedules of accommodation

Para no.	Activity Space	Space area sq.m.	Qty.	Total area sq.m.
Entrance & concourse				
4.4	Draught lobby	20.00	1.0	20.00
4.11	Concourse	40.00	1.0	40.00
4.5	Wheelchair/Trolley parking	10.50	1.0	10.50
4.18	Shop space	23.00	1.0	23.00
4.16	Vending machines	7.00	1.0	7.00
Reception				
4.6	Reception/Enquiries desk	10.00	1.0	10.00
4.8	Main waiting (30 spaces)	40.00	1.0	40.00
4.13	Voluntary workers' room (up to 6)	10.00	1.0	10.00
Ambulances				
4.10	Liaison officer's office	10.00	1.0	10.00
4.9	Transport waiting area (15 spaces)	22.00	1.0	22.00
Sanitary facilities				
4.20	Visitors' WC	8.00	2.0	16.00
4.20	Wheelchair WC	4.50	2.0	9.00
4.21	Baby feeding and nappy changing room	5.00	1.0	5.00
Sundry areas				
4.22	Cleaners' room	6.50	1.0	6.50
4.23	Switchroom	1.50	1.0	1.50
	Nett total			230.50
	Circulation etc			91.50
	Total			**322.00**
		Departmental area = 320 Sq.m.		

Snack bar facilities

Para no.	Activity Space	Space area sq.m.	Qty.	Total area sq.m.
4.14	Servery	26.50	1.0	26.50
4.17	Store	8.00	1.0	8.00
4.16	Snack bar seating (24 seats)	32.00	1.0	32.00
	Nett total			66.50
	Circulation etc			26.50
	Total			**93.00**
		Departmental area = 95 Sq.m.		

8.0 Activity Data

Introduction

8.1 "Activity Data" is an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the computerised Activity Data Base, first issued to Health Authorities in England and to the Health Departments in Scotland, Northern Ireland and Wales in 1989, and subsequently up-dated twice yearly. It comprises three types of information sheet: Activity Space Data Sheets (known as A-Sheets), their supporting Activity Unit Data Sheets (known as B-Sheets) and A-Sheet component listings (known as D-Sheets).

8.2 A-Sheets record in more detail than is described in this Note each task or activity that is performed in a particular activity space (which may be a room, space, corridor or bay) together with environmental conditions and the technical data necessary to enable the activities to be performed. Each A-Sheet also contains a list of the titles and code numbers of the relevant B-Sheets.

8.3 B-Sheets provide narrative text and graphics to scale relating to one activity. They show equipment fitted or supplied as part of the building, and the necessary engineering terminals. There are also "component B-Sheets" which show a range of particular components rather than an activity.

8.4 D-Sheets provide information about the total quantities of components (excluding those in Group 4 - see paragraph 1.11) extracted from all B-Sheets selected for inclusion in an individual A-Sheet.

8.5 Activity Data is only available in the form of magnetic media, but this may be used to generate paper copies where required.

8.6 Further information about the use and preparation of Activity Data can be found in the 'Guide to 'A' and 'B' Activity Data Sheets and their use in Health Building Schemes' issued to Health Authorities with EL(89) MB/19 (WHC(89)18 in Wales). Health Authorities may obtain additional copies of the Guide and an explanatory video tape from NHS Estates, Room 540, Euston Tower, 286 Euston Road, London NW1 3DN.

Activity Data applicable to this Note

8.7 The A-Sheets recommended for the activity spaces described in this Note are either new sheets, amended ones or selected from existing sheets. A list of A-Sheet code numbers and titles is given at the end of this Chapter.

8.8 Further Activity Data Sheets may be selected, or drawn up by project teams to their own requirements, for any services not described in the Note or included in the list. Members of project teams are advised to contact their Activity Data Co-ordinator/Welsh Office for information and advice about the selection of Activity Data, at an early planning stage.

List of Activity Data A-Sheets

Note. The Activity Data A-Sheets listed below may not carry a title identical to the activity spaces detailed in this Note. Use of the appropriate A-Sheet code number will, however, result in the correct activity space being accessed.

Activity Space	A-Sheet Code no.	Para no. in HBN
1. MAIN ENTRANCE: ENTRANCE CANOPY	J0120	4.3
2. MAIN ENTRANCE: DRAUGHT LOBBY	J0108	4.4
3. PARKING BAY: TROLLEY/WHEELCHAIR	G0114	4.5
4. MAIN ENTRANCE: RECEPTION/ENQUIRY DESK	J0121	4.6-4.7
5. MAIN ENTRANCE: CONCOURSE	J1131	4.11-4.12
6. MAIN ENTRANCE: TRANSPORT, AWAITING AREA For ambulances	J0122	4.9
7. MAIN WAITING: MAIN WAITING AREA	J1130	4.8
8. SHOP SPACE: WITH STORE Main Entrance	G0805	4.18-4.19
9. SNACK BAR: PREP AREA, SERVERY	P0802	4.14-4.15

Activity Space	A-Sheet Code no.	Para no. in HBN
10. STORE: SNACK BAR	W1554	4.17
11. REFRESHMENT AREA: SEATING	P0803	4.16
12. OFFICE: AMBULANCE LIAISON OFFICER	M0545	4.10
13. OFFICE: VOLUNTARY WORKERS	M0107	4.13
14. WC: WASH, MIRROR Male or Female	V0911	4.20
15. WC/WASH: WHEELCHAIR	VO912	4.20
16. WASHROOM: NAPPY CHANGING, BABY FEEDING	V1113	4.21
17. CLEANERS ROOM:	Y1213	4.22
18. SWITCHGEAR: ROOM/CUPBOARD	KO101	4.23

8.9 In order to ensure consistent and economic provision, variations from the A-Sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will differ substantially from that described.

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Not including detailed engineering references, which are given at the end of Chapter 6.

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Other publications in this series

(Given below are details of all Health/Hospital Building Notes which are either published by HMSO or in preparation. A Design Briefing System Notebook is available with Notes marked (*) – information is given within the Notebook on how it may be used. Information is correct at time of publication of this Note.)

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Health Building Note 51

Accommodation at the main entrance of a District General Hospital

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